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Abstract

RADIOMETRIC AERIAL AND EMANOMETRIC GROUND PROSPECTING METHODS IN ARGENTINA

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RADIOMETRIC AERIAL PROSPECTING

Sporadic aerial prospecting for radioactive ore deposits began in Argentina in the middle of 1958. Since 1960 the method has been applied systematically and, thanks to its greater economy and speed, has come to be used almost exclusively, in preference to ground prospecting, for the surveying of extensive uranium-bearing areas.

Up to the present 75 000 km^2 have been prospected, in various regions, and 550 radioactive anomalies have been discovered, 250 of which have been selected for surface examination. Fifty of these have already been investigated and found to contain uranium contents of varying amounts and, in many cases, of economic value.

The techniques and instruments used in Argentina are essentially similar to those current in other countries.

The authors describe the features of the instruments and the improvements made to them, and the methods used in the field operations, for interpretation and correction of records and for preparation of the final data, stating the methods of calculation used in all cases.

Mention is also made of a radiometric aerial prospecting trial over oil-bearing areas, covering 5000 km^2, in three separate regions of the country (Salta, Neuquén, Santa Cruz), and of the modifications made to the method for this purpose, aimed at eliminating, by means of geological interpretation supported by geochemical analysis, the errors due to the recording of radiation from thorium and potassium.

EMANOMETRIC GROUND PROSPECTING

Along with the application of the radiometric aerial prospecting technique, there has recently been a revival of the use of electrometers for the detailed prospecting of uranium deposits, because of the ease of application of the emanation method, the speed of field operations, and the larger volume of data obtained.

The National Atomic Energy Commission has carried out emanometric prospecting with Ambronn electrometers in various parts of Argentina.

The authors quote examples of use of the emanometric method to investigate the continuity of uranium mineralization, including the cases of the "Rodolfo" (Córdoba), "Los Adobes" (Chubut) and "Cuesta de Huaco" (San Juan) deposits, and to direct trial drillings and logging in areas where the mineralized strata lay under a thick alluvial cover. Subsequent exploratory work (drilling and mining) has confirmed the results obtained with this method.